UNITED STATES PATENT AND TRADEMARK OFFICE

CERTIFICATE OF CORRECTION

PATENT NO. : 6,970,560 B1
APPLICATION NO. : 09/710703
DATED : November 29, 2005
INVENTOR(S) : John Josef Hench et al.

It is certified that error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

On the title page, item (56) References Cited,
Page 2, OTHER PUBLICATIONS, line 34 reads "...Guanghan Xu et al., IEEE Transactions in Singal Process-,..." and should read -- ...Guanghan Xu et al., IEEE Transactions in Signal Process-,... --.

Page 2, OTHER PUBLICATIONS, line 37 reads "Alexanda Duel-Hallen et al., IEEE Transactions on Com-,..." and should read -- Alexandra Duel-Hallen et al., IEEE Transactions on Com-,... --.

Column 1, line 46 reads "...transmitted over wires, cable, fiber optics wireless, or other..." and should read -- ...transmitted over wires, cable, fiber optics, wireless, or other... --.

Column 9, lines 32-33 read "...value (computed over the entire spectrum of a communication channel.) For instance, the probabilistic cause-effect ..." and should read -- ...value (computed over the entire spectrum of a communication channel). For instance, the probabilistic cause-effect ... --.

Column 11, line 45 reads "...services in the time interval $T \equiv t\ \beta[T, T+dT]$, where dT..." and should read -- ...services in the time interval $T \equiv t\ \epsilon[T, T+dT]$, where dT... --.

Column 11, lines 45-46 reads "...where dT a small length of time on the order of one to a small..." and should read -- ...where dT is a small length of time on the order of one to a small... --.

Column 11, lines 51-52 read "...measured levels of noise the time interval $T \equiv t\ \beta[T, T+dT]$. The list M is a vector whose entries correspond..." and should read -- ...measured levels of noise the time interval $T \equiv t\ \epsilon\ [T, T+dT]$. The list M is a vector whose entries correspond... --.

Column 12, line 67 reads "A(3,3) A(3,3)+1=2" and should read -- A(3,3)=A(3,3)+1=2 --.

Column 13, line 51 reads, "A. Forced Training" and should read -- Forced Training: --. (no indent)

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Column 16, line 67 reads, "...external singular vectors of ● ● or ● •·• ● ● ● Since a ..." and should read -- ...external singular vectors of ● ● or ● •·• ● ● ●. Since a ... --.

Column 18, line 36 reads, "The signal transform block 408 coverts raw, digitized..." and should read -- The signal transform block 408 converts raw, digitized... --.

Column 18, lines 66-67 read, "...be to provide for four 64-bin groupings (quartiles) for non aggregate data. The drift estimates help give more accurate..." and should read -- ...be to provide for four 64-bin groupings (quartiles) for non-aggregate data. The drift estimates help give more accurate... --.

Column 19, line 25 reads, "...or the steady state value of noise before and after and event." and should read -- ...or the steady state value of noise before and after an event. --.

Column 20, line 64 reads, "PSD $_{\text{HDSL Disturber}} = K_{HDSL}$..." and should read -- PSD $_{\text{HDSL-Disturber}} = K_{HDSL}$... --.

Column 21, line 30 reads,

$$\sin^2\left(\frac{\pi f}{f_0}\right) \times \frac{1}{1+\left(\frac{f}{f_{3\ \text{dB-}LPF}}\right)^6} \times \frac{f^2}{f^2 + f^2_{3\ \text{dB-}HPF}} \times (x_n \times f^{3/2})$$

and should read

$$\sin^2\left(\frac{\pi f}{2f_0}\right) \times \frac{1}{1+\left(\frac{f}{f_{3\ \text{dB-}LPF}}\right)^6} \times \frac{f^2}{f^2 + f^2_{3\ \text{dB-}HPF}} \times (x_n \times f^{3/2})$$

Column 21, line 53 reads, "PSD $_{\text{ADSL Disturber}} = K_{ADSL}$..." and should read -- PSD $_{\text{ADSL-Disturber}} = K_{ADSL}$... --.

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Column 22, line 24 reads, "It should also be noted that case certain frequency bins are..." and should read -- It should also be noted that in case certain frequency bins are... --.

Column 22, line 35 reads, "The frequency of zeros just increase the level of confidence..." and should read -- The frequency of zeros just increases the level of confidence... --.

Column 23, line 37 reads, "Furthermore, if the columns of A are suitable normalized,..." and should read -- Furthermore, if the columns of A are suitably normalized,... --.

Column 26, lines 35-37 read, "...identified. This algorithm is appropriate for identifying the sudden changes in SNR that is common when the level of noise from disturbers suddenly change due to an..." and should read -- ...identified. This algorithm is appropriate for identifying the sudden changes in SNR that are common when the level noise from disturbers suddenly changes due to an... --.

Column 27, line 10 (Equation 5) reads,
"$p_{ij} \equiv = P\{M(k)=M_j | M(k\text{-}1)=M_i\}$" and should read -- $p_{ij} \equiv P\{M(k)=M_j | M(k\text{-}1)=M_i\}$ --.

Column 28, lines 11-12 read,
"$P_{01}(k\text{-}1)=\mu_{1|1}(P_1(k\text{-}1)+(x_1(k\text{-}1)\text{-}x_{01}(k\text{-}1))^{2)+}\mu_{2|1}(P_2(k\text{-}1)+(x_2(k\text{-}1)\text{-}x_{01}(k\text{-}1))^2)$"
and should read
-- $P_{01}(k\text{-}1)=\mu_{1|1}(P_1(k\text{-}1)+(x_1(k\text{-}1)\text{-}x_{01}(k\text{-}1))^2)+\mu_{2|1}(P_2(k\text{-}1)+(x_2(k\text{-}1)\text{-}x_{01}(k\text{-}1))^2)$ --.

Column 28, lines 13-14 read,
"$P_{02}(k\text{-}1)=\mu_{1|2}(P_1(k\text{-}1)+(x_1(k\text{-}1)\text{-}x_{02}(k\text{-}1))^{2)+}\mu_{2|2}(P_2(k\text{-}1)+(x_2(k\text{-}1)\text{-}x_{02}(k\text{-}1))^2)$"
and should read
-- $P_{02}(k\text{-}1)=\mu_{1|2}(P_1(k\text{-}1)+(x_1(k\text{-}1)\text{-}x_{02}(k\text{-}1))^2)+\mu_{2|2}(P_2(k\text{-}1)+(x_2(k\text{-}1)\text{-}x_{02}(k\text{-}1))^2)$ --.

Column 30, lines 24-25 read, "The likelihood functions associated with these moments assuming a Gaussian distribution is..." and should read -- The likelihood functions associated with these moments assuming a Gaussian distribution are... --.

Column 31, line 26 reads, "II. Event Clustering" and should read -- III. Event Clustering --.

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Column 31, line 45 reads, "...collection sample time tk. At this time, a window is either..." and should read -- ... collection sample time t_k. At this time, a window is either... --.

Column 32, line 18 reads, "III. Event Analysis" and should read -- IV. Event Analysis --.

Column 33, line 26 reads, "...coefficients and transfer functions. Note that these are the..." and should read -- ...coefficients and transfer functions). Note that these are the... --.

Column 33, line 28 reads, "...defined above in section I. Training, above." and should read -- ...defined above in section I. Training. --.

Column 33, line 35 reads, "...(based upon statistics of observed SNR changes vs. offender..." and should read -- ...based upon statistics of observed SNR changes vs. offender... --.

Column 33, line 40 reads, "...comparison may be be done probabilistically using Bayesian..." and should read -- ...comparison may be done probabilistically using Bayesian... --.

Column 33, line 43 reads, "...connectivity matrix, see section I, Training, above) to some..." and should read -- ...connectivity matrix, see section I. Training) to some... --.

Column 34, line 1 reads, "...v_{ij}, i=1, m and j=1, ...,n_i,n_i possibly different for each i,..." and should read -- ...v_{ij}, i=1, ..., m and j=1, ...,n_i,n_i possibly different for each i,... --.

Column 35, lines 1-2 read, "...as "was the victim affected or not?" All objects reporting a chance are included, as are all objects expected to have..." and should read -- ...as "was the victim affected or not?" All object reporting a change are included, as are all objects expected to have... --.

Column 35, lines 8-9 read, "...in the network the events occur and the possible cause depend on which victims are being considered." and should read -- ...in the network the events occur and the possible cause depends on which victims are being considered. --.

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Column 38, lines 34-35 read, "...lines have become inconclusive. In this case, more than one likely causes may be the conclusion." and should read -- ...lines have become inconclusive. In this case, more than one likely cause may be the conclusion. --.

Column 39, line 40 reads,

"$\Phi_{k+1}^{-1}=\Phi_k^{-1}-\Phi_k^{-1}u_{k+1}(I+u_{k+1}{}^T\Phi_k^{-1}u_{k+1})^{-1}u_{k+1}{}^T\Phi_k^{-1}$," and should read

-- $\Phi_{k+1}^{-1}=\Phi_k^{-1}-\Phi_k^{-1}u_{k+1}(I+u_{k+1}^T\Phi_k^{-1}u_{k+1})^{-1}u_{k+1}^T\Phi_k^{-1}$ --.

Column 39, lines 42-43 reads,

"$\Theta_{k+1}=(I-\Phi_k^{-1}u_{k+1}(I+u_{k+1}{}^T\Phi_k^{-1}u_{k+1})^{-1}u_{k+1}{}^T)\,\Theta_k+\Phi_{k-1}y_{k+1}u_{k+1}T)$"

and should read

-- $\Theta_{k+1}=(I-\Phi_k^{-1}u_{k+1}(I+u_{k+1}^T\Phi_k^{-1}u_{k+1})^{-1}u_{k+1}^T)\,(\Theta_k+\Phi_k^{-1}y_{k+1}u_{k+1}^T)$ --.

Column 40, line 14 reads, "...as four out-of-domain coupling coefficients, $beta_{11}$, $beta/_{12}$,..." and should read -- ...as four out-of-domain coupling coefficients, $beta_{11}$, $beta_{12}$,... --.

Column 40, line 25 reads, "...input spectra of the DSL Services. The inputs T_1 and T_2, are..." and should read -- ...input spectra of the DSL Services. The inputs T_1 and T_2 are... --.

Column 40, line 32 reads, "...is assumed to be the identity matrix, i.e., $M_1=1$. Similarly, ..." and should read -- ...is assumed to be the identity matrix, i.e., $M_1=I$. Similarly, ... --.

Column 40, line 67 reads, "...variance to the variance derived from from an ensemble of ..." and should read -- ...variance to the variance derived from an ensemble of... --.

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Column 41, line 48 reads, "... ● ● or ● $^{-1}$ ● ● Since the solution of the identification..." and should read -- ... ● ● or ● $^{-1}$ ● ●. Since the solution of the identification... --.

Column 41, line 64 reads, "...of the frequency bins, while the second could be propagate..." and should read -- ...of the frequency bins, while the second could be propagating... --.

Column 42, line 65 reads,

"$\hat{v}_{jk}\sigma^2_{jk}|u_j|^2$," and should read -- $\hat{v}_{jk} = \sigma^2_{jk}|u_j|^2$ --.

Column 43, line 40 reads, "Impairment Estimation for Out-of-Domain Offenders" and should read -- 3. Impairment Estimation for Out-of-Domain Offenders --.

Column 43, line 27 reads,

"$\hat{v}_{pq,jk}\Sigma^2_{pq,jk}|u_{pq,j}|^2$," and should read -- $\hat{v}_{pq,jk}\,\sigma^2_{pq,jk}|u_{pq,j}|^2$ --.

Column 45, lines 34-35 read, "...instructions which, when executed in a processing system, causes said system to perform a method, the method com-..." and should read -- ...instructions which, when executed in a processing system, cause said system to perform a method, the method com-... --.

Signed and Sealed this

Twenty-sixth Day of February, 2008

Jon W. Dudas

JON W. DUDAS
Director of the United States Patent and Trademark Office